PROSIDING PERKEM 10, (2015) 294 – 307
ISSN: 2231-962X

The Malaysia – Turkey Bilateral Trade Agreement: Impacts on Palm Oil Industry

Tajudeen Mukhtar Olatunji
Pusat Pengajian Ekonomi
Fakulti Ekonomi dan Pengurusan

INTRODUCTION

The effect of economic integration is ambivalent and may require sectoral analysis of the economy in order to capture the policy impacts and implications on the economy and welfare of consumers. Economic integration is anticipated to ease distribution of goods, services, and factors with the main objective of increasing economic growth and development. The sectoral analysis of the impacts of economic integration should be the major focus of policy makers and government before ratifying an agreement.

Economic integration is the alliance of economic policies between different countries through limited or complete abolition of tariff and non-tariff barriers to trade, services, and production factors between partners. The short term gains from integration can be strapped by the influence of domestic or international trade factors or elements outside the integration, whereas the long term gains can only be an effect of the dynamic factors in the domestic or international market (Joao, 2009).

The process of regional economic integration in South East Asia started with the establishment of the Association of South East Asian Nations (ASEAN) in August, 1964 burden with the responsibility of accelerating economic growth, social progress, and political security among member countries. Presently, Malaysia is partner to three regional economic integration arrangements and six bilateral free trade agreements. Two agreements are awaiting implementation, and more are under consideration. The country is a signatory and member of regional economic integration such as the Association of South-East Asian Nations (ASEAN), ASEAN Free Trade Area (AFTA), and Asia-Pacific Economic Corporation (APEC). Malaysia has bilateral free trade relations with Pakistan, New Zealand, Chile, Japan, Australia, India, and regional ASEAN trade links with India, China, EU, and Korea (MITI, 2013). Bilateral free trade agreements with the EU and Turkey are awaiting implementation.

Turkey strategic proximity to the Europeans and Middle East markets can enhance existing markets, create new markets and consumers for Malaysian products. The bilateral free trade agreement between Malaysia and Turkey (MTFTA) was concluded in April 2014, after four years of negotiations. However, its implementation has not been announced. Theoretically, this agreement is expected to enhance bilateral trade, liberalization of commerce in goods and services, reduce or eliminate tariffs on substantial products, and promote the economic relationship between both countries. The existence of preferential tariff of 30 percent reduction on Malaysia palm oil and products, as contained in the MTFTA have implications and impacts. The consequences are changes in the relative price of palm oil and products, and reduce Turkey imports of palm oil and products from the rest of the world and increases market shares towards Malaysia.

Palm oil has been the most traded vegetable oil in the world, followed by soybean oil, sunflower oil, rapeseed oil, and others. Indonesia and Malaysia dominate global palm oil production and trade, and both accounted for over 85 percent of global output and exports. Malaysia has dominated palm oil exports for over four decades, and the sector has contributed to employment generation, agriculture and industrial value added, incomes and growth of the economy. The sector generated 0.61 million employment (Choo, 2012), and export revenues of RM80.4 billion, accounting for 9.1 percent of gross domestic product in 2011. Export revenues of RM71.4 billion and RM61.3 billion were earned in 2012 and 2013, contributing 7.6 and 6.2 percent to gross domestic products respectively (see Table 11). Major export destination of Malaysia palm oil are China, India, Netherland, U.S.A, Pakistan, Japan, Iran, Egypt, Singapore, Benin, Bangladesh, Philippines, Turkey, and Russia. India led as the largest importers of Malaysia palm oil in 2014 with a market share of 19 percent, followed by China (16%), Netherland (9.3%), Pakistan (4.7%), U.S.A (4.5%), and others 66.5 percent (see Table 12).

The primary objective of this study is to examine the welfare and revenue impacts of the bilateral trade agreement between Turkey and Malaysia on the palm oil sector using partial equilibrium model approach. The WITS model Developed by the World Bank and the United Nations Conference on Trade and Development (UNCTAD) is used to simulate three scenarios.

The structure of this report is as follows: Section II provides an overview of the literature reviews on regional and bilateral trade arrangements. Section III provides background information on the impacts of the previous bilateral trade agreement on Malaysia palm oil. Section IV discusses the methodology, and Section V reveals estimated results. Section VI concludes and suggests the direction ahead for Malaysian policy makers.

LITERATURE REVIEW

According to (Yarbrough and Yarbrough, 2006) the protectionist element of economic integration is called trade diversion, and the liberalization element is trade creation. Trade creation occurs when reduction in tariff by a particular country on a commodity reduces the price of the product in the domestic market (Villa et al., 2012). The implications are rising in the export supply of products as a result of falls in domestic price, expansion of the existing product market, creation of new product markets, and increasing in foreign income of domestic consumers as an outcome of lower cost of import. Trade diversion is the diversion of commerce from non-members to members with the same total amounts of commodities imported. The concept of trade diversion and trade creation effects on regional economic integration started from the pioneering work of (Viner, 1950) called the Viner's theory. Viner's defined trade diversion as the shifts in trade from less expensive to more expensive producers while trade creation is the trade from most expensive to fewer expensive manufacturers (Wadim, 2013). He further opined that an increase in trade within members of the Custom Union may not translate to welfare improvement, but depends on the degree of direction of the trading increment towards trade creation or trade diversion. When trade increased as a consequence of trade creation, economic integration increases member country's welfare and the reverse hold if trade increases as a result of trade diversion. The concept of trade creation and trade diversion was further argued by (Johnson, 1965) to be defined on the source of welfare effects rather than on the basis of trade flows (Wadim, 2013). Several studies have been conducted on the impacts of economic integration using different techniques such as partial equilibrium model approach (Villa et al., 2012; Remi, 2005; Veeramani and Gordhan, 2010; Rashmi, 2015; Choudhry et al., 2013); computable general equilibrium model (Ahmed, 2010; Lee and Song, 2008; Rashmi, 2014); time series approach (Nekhay et al., 2011; Khondakar et al., 2008; and gravity equation model by (Rahu et al., 2013).

One of the major concerns of empirical analysis of trade integration policy impacts is the choice of a suitable model. A computable general equilibrium model takes into consideration the inter-linkages among sectors or markets, and able to capture the long-run impacts. Significant limitations of the general equilibrium model are unrealistic assumption (full employment and constant trade balance), overvaluation of gains, overlooked short and medium term effects, and inability to capture disaggregated market effects. A partial equilibrium model is capable of capturing disaggregated market impacts, use time series information, policy-driven analysis, comprehensive product analysis, and able to measure the short and medium term effects. Villa et al., (2012) used a partial equilibrium model to examine the impacts of a preferential trade agreement between Canada and Colombia. The outcomes of the simulation showed that trade relations between the two nations would increase by ten percent in the beginning year of the accord. They also found that the agreement would increase welfare in both countries as trade creation is more than a trade diversion. Remi, (2005) investigates the impacts of Europe Economic Partnership Agreements (EPA) with Economic Communities of West African States (ECOWAS) using a partial equilibrium model approach. The study used SMART software to simulate the effects of full liberalization of trade between the European Union and ECOWAS. The results found that the EU would gain $365 million as trade diversion, and domestic producers in ECOWAS would loss $24.45 million to trade diversion. The analysis also revealed that EPA would lead to falling in tariff revenues and countries such as Ghana and Guinea-Bissau might loss about 19 percent of government tax income. The author further recommended interregional liberalization prior to EPA and high capability to limit rents captured during the trade.

N Balu and Nazlin, (2011) used a quantitative analytical approach to investigate the impacts of a bilateral free trade agreement between Malaysia and Five countries (Japan, Pakistan, Chile, India, and New-Zealand). The result revealed that a bilateral free trade agreement increased the volume and values of Malaysia palm oil and products. Rahul, Sadhana and Gail, (2013) used the augmented gravity model to examine the effects of bilateral and regional preferential trade agreement between ASEAN members and Australia, New-Zealand, China, India, Japan and Korea. They found that disaggregated country by country results indicate that plurilateral PTAs have a more significant impacts compared to bilateral PTA among ASEAN+6 countries. Khondaker et al., (2008) employed a quantitative time series data from 1989 to 2007 to investigate the impacts of the bilateral trade agreement between

Malaysia and Japan. They discovered the influence of China on Malaysia as an important factor that would be responsible for the short run impact of bilateral trade between Malaysia and Japan. Business growth was anticipated to be US$50. 34 billion in 2010 and might decline during the twelvemonth. Rashmi, (2014) conducted a comprehensive examination of the impacts of the Trans-Pacific Partnership Agreement (TPPA) on Malaysia's domestic value added (DVA) trade with partners. The author utilized a dynamic gravity model to estimate bilateral trade in value added exports and imports among 12 TTPA members' countries on Malaysia domestic value-added trade. The results discovered that TPPA would lead to an increase in domestic value added exports of the USA, Japan and New Zealand, and Malaysia would experience an average falls in domestic value added by US$17 billion annually. The study further examined the impacts of tariff liberalization on Malaysia trade and sectors with the TPPA partners using a partial equilibrium model approach. The results revealed that the effect of tariff liberalization on Malaysia is insignificant due to free trade agreements between Malaysia's and TPPA partners. Malaysia import would increase by about US$3 billion annually, while export would expand by about US$1. 5 billion per annum, allowing a trade balance of US$1. 5 billion per year. The bulk of the increases in imports comes from a rise in demand from the USA and Japan products. Ahmed, (2010) used computable general equilibrium model and SMART to examine the sectoral impacts of tariff liberalization between India and ASEAN members. The results found that tariff liberalization would lead to increase in the exports of processed food items, agricultural products, and fisheries from ASEAN members to India and the implication is a fall in employment and wages. The author further stated that trade liberalization between India and ASEAN leads to welfare gains, but weaken the term of trade of India, and loss of revenues might affect government projects.

Impacts of Previous Bilateral Trade Agreement on Malaysia Palm Oil

The bilateral trade accord between Malaysia and India has contributed to tariff reduction on palm oil and increase India demands for Malaysia palm oil. Japan entered into bilateral trade agreements with Malaysia in 2005, and the treaty was implemented in 2006. The impacts of the accord on Malaysia palm oil showed an annual growth rate of 0.95 of palm oil imported by Japan between 2005 and 2014, imports increased from 0.472 million tonnes in 2005 to 0.513 million tonnes in 2014 (MPOB).

China was the largest import destination of Malaysia's palm oil prior to 2014 with an annual market share of 20 percent. ASEAN-China trade relationship agreement entered into in 2005 has significantly impacted on China demands for Malaysia's palm oil and products. The Chines and Japanese demands of Malaysia palm oil before the BTA rose by 24 and 5 percent annually between the year 2000 and 2004, grew at six and three percent average per annual during the BTA between 2005 and 2009, and declined by four and 1.4 percent between 2010 and 2014 respectively. Pakistan reduced import tariffs on Malaysia palm oil by five percent in 2008 for a period of three consecutive years based on a bilateral trade accord. Palm oil imports by Pakistan increased after the implementation of the treaty increased by 41 percent to 1.76 million tonnes in 2009 and falls to 0.812 million tonnes in 2014. India and New Zealand demands of Malaysia palm oil rose by 17 and 1.3 percent annually between the year 2005 and 2009, and grew at 23 and 1.1 percent average per annual during the BTA between 2010 and 2014 respectively. Primary concerns about the impacts of previous bilateral trade agreements in the palm oil sector is that the largest growth occurred prior to BTA and in the second year of implementation of BTA and subsequently slowdowns. The reaction of strong competitor's such as Indonesia might have been responsible for the wrinkled gains of BTA (see figure iii and table 13).

Bilateral Trade between Malaysia and Turkey

Trade between Malaysia and Turkey grew by 13 percent on average from US$0. 59 billion in 2009 to US$1.09 billion in 2013. The annual average demand for Malaysia products of Turkey is US$1. 23 billion and Malaysia imports of Turkey goods worth US$0.17 billion per annual between 2009 and 2013 respectively. Malaysia exports to Turkey rose by 13 percent from US$0.48 billion in 2009 to US$0.89 billion in 2013 while Turkey exports to Malaysia grew by 14 percent from US$0.14 billion in 2009 to US$0.27 billion in 2013 (see Table 3). The trade complementarity index measures the extent of association between exports adequacy of one country to import demand of another country. An index of hundred demonstrates a case of perfect correlation between partners, i.e. the values of imports and exports between trading partners are the same. High complementarity index indicates healthy trade between partners with the possibility of enhancing growth and welfare while zero index indicate the existence of negative correlation. Malaysia holds a significant trade complementarity index with Turkey than Turkey has with Malaysia, an annual average of 56.39 compared with 51.99 indexes for Turkey. However, the Turkey trade complementarity index grew by 1.2 percent, while Malaysia

complementarity index decline at an average rate of three percent between 2009 and 2013 (see Table 3). Trade intensity indexes for both countries is greater than zero and less than forty, the implication is that the value of commerce between them is encouraged and can be enhanced considering their shares of trade in the world. The trade intensity index for Turkey with regard to Malaysia increased at an average rate of two percent, and the index for Malaysia with respect to Turkey grew at three percent between 2009 and 2013 respectively. Malaysia has maintained a positive trade balance with Turkey, trade balance increased at an average growth rate of 14 percent in 2009 to US$0. 69 billion in 2013 (see figure I & Table 3).

In 2013, mechanical, electrical and electronic products constituted approximately one-fourth of the values of Malaysia exports to Turkey, followed by vegetable (product code HS06–15) with market share value of 20 percent worth US$0. 241 billion. The values of crude palm oil (product code HS, 151110) exported was US$ 430,645, and refined palm oil products (HS, 151190) accounted for US$170.6 million dollars. Textiles and clothing accounted for 16 percent of the total market value (US$0. 197 billion), plastics and rubber products 15% (US0.184 billion), Metals (US$0. 115 billion), and Chemicals and chemical products (US$0. 077 billion) see Table four.

Import tariffs by Turkey on Malaysia's crude palm oil increased from 6 percent in 2006 to 15.60 percent in 2013. Refined palm oil tariff falls from 17.6 percent in 2006 to 13 percent in 2008, and subsequently grew to 24.9 percent in 2013 (see figure II).

METHODOLOGY

This paper employs a partial equilibrium approach to evaluate the potential impacts of the bilateral trade agreement between Malaysia and Turkey on the palm oil sector using the SMART model of the World Bank Integrated Trade Solution (online database). The model has been applied to test the impacts of the bilateral trade agreement by (Villa et al., 2012; Stephen, 2012; Choudhry et al., 2013). Data on Trade and Tariffs are collected from the UNComtrade online database, WTO database and TRAINS online database. The study also estimates trade creation, trade diversion as well as the welfare and revenue impacts of MTBTA on crude palm oil (HS, 151110) and processed palm oil (HS, 151190). Important parameters that govern the behaviour of importers and exporters in the model are export supply elasticity, import demand elasticity, and import substitution elasticity. Export supply elasticity is assumed to be infinitely elastic, treating Turkey as price takers while the import demand elasticity for Turkey is endogenously calculated by the model. Following (Cline, 1978) and (Stephen, 2012) the Armington import substitution elasticity is assumed to be 2.5 percent.

Using the WITS-SMART model, this paper simulates the following three scenarios:
The scenario I estimate the impact of 30 percent immediate reduction on the 2013 applied tariffs on crude palm oil (HS, 151110) and refined palm oil (HS, 151190) from Malaysia. Scenario II examines the impact of 50% tariff reduction and Scenario III estimate the effects of full liberalization of Malaysia crude palm oil and processed palm oil to Turkey.

RESULTS

TABLE 5 Gives a summary result of scenario 1

Country	HS Code	Base Year (2013) Export Value (US$ 000)	Percentage change in Export Value (%)	Percentage of Trade Creation in Total Effect (%)	Percentage of Trade Diversion in Total Effect (%)	Total Effect (US$ 000)
Indonesia	151190	323,031.03	-5.40			-17,440.14
Malaysia	151110	430.64	2.86	99.31	0.69	12.32
Malaysia	151190	170,822.50	15.46	33.09	66.91	26,412.39
Other	151110	0.87	-9.79			-0.09
Other	151190	4,955.99	-4.69			-231.62
Total	151110	431.51	2.84	99.31	0.69	12.24
Total	151190	498,808.66	1.75	33.09	66.91	8,740.63

Source: WITS-SMART. Author calculation. (151190 = crude palm oil, 151110 = refined palm oil).

The impact of 30 percent tariff reduction by Turkey on Malaysia's palm oil would bring forth a significant positive growth of 2.9 and 15.5 percent of crude palm and refined product export revenues for Malaysia. Malaysia would generate a trade creation of 99 percent for crude palm and 33 percent of refined palm products. Most of the trade creation of crude palm oil is dominated by Malaysia's while Indonesia leads refined palm oil products. Malaysia would generate a trade diversion of less than one percent of crude palm oil and 67 percent of processed palm oil value at $17.6 million. Indonesia and others would have the highest loss in palm oil product sales to Turkey. Indonesia would lose US$17. 4 million follow by Netherland ($125,200) and Singapore ($96,770). The requirement for crude palm oil and processed palm oil by Turkey would increase, crude palm oil demand values would increase by about three percent and refined product by nearly two percent.

TABLE 6 Trade, Welfare and Revenue Effect

Welfare and Revenues Effect of 30 percent reduction in Tariff on Palm Oil and Products			
Product Code	Import -Effect (US$ 1000)	Tariff Revenue Loss (US$ 1000)	Consumer Welfare (US$ 1000)
151110	443.75 (2.83%)	-18.822 (-27.96%)	1.623
151190	507,549.29 (1.75%)	-12,557.033 (-10.11%)	2049.553

Source: WITS-SMART. Author calculation

The welfare effect of Turkey consumers would improve by US$1623 and US$2. 04 million on crude palm oil and refined products respectively. Government revenues from import tax on crude palm oil and products would fall by 28 and 10 percent, respectively, this account for US$18, 822 and US12.5 million losses. Total imports of crude palm oil would grow by 2.8 percent to US$443, 750, and refined palm products would increase by 1.75 percent to US$507.5 million.

Scenario 11

The impact of 50 percent tariff reduction by Turkey on Malaysia's palm oil would bring forth a significant positive growth of 4.8 and 26 percent of crude palm and refined product export revenues for Malaysia. Malaysia would generate a trade creation of 99 percent for crude palm and 32 percent of refined palm products, and a trade diversion of less than one percent for crude palm oil and 68 percent of processed palm oil value at $45 million. Indonesia and others would have the highest loss in palm oil product sales to Turkey.

TABLE 7 Summary result of scenario II

Country	HS Code	Base Year (2013) Export Value (US$ 000)	Percentage change in Export Value (%)	Percentage of Trade Creation in Total Effect (%)	Percentage of Trade Diversion in Total Effect (%)	Total Effect (US$ 000)
Indonesia	151190	323,031.03	-9.34			-30163.08
Malaysia	151110	430.64	4.77	99.32	0.68	20.54
Malaysia	151190	170,822.50	26.39	32.31	67.69	45088.51
Other	151110	0.87	-16.01			-0.14
Other	151190	4,955.99	-7.22			-357.71
Total	151110	431.51	4.73	100	100	20.40
Total	151190	498,808.66	2.92	100	100	14567.72

Source: WITS-SMART. Author calculation. (151190 = crude palm oil, 151110 = refined palm oil).

Indonesia would lose US$30.1 million follow by others US$357,710. The demand for crude palm oil and processed palm oil by Turkey would increase, crude palm oil demand values would increase by five percent and refined product by three percent.

Table 8 Trade, Welfare and Revenue Effect

Welfare and Revenues Effect of 50 percent reduction in Tariff on Palm Oil and Products			
ProductCode	Import -Effect (US$ 1000)	Tariff Revenue Loss (US$ 1000)	Consumer Welfare (US$ 1000)
151110	451.911 (4.73%)	35.306 (-47.55%)	2.388
151190	513376.379 (2.92%)	100,949.795 (-18.72%)	3245.971

Source: WITS-SMART. Author calculation

Turkey consumers welfare would improve by US$2388 for crude palm oil and US$3.24 million for refined products. Government revenues from import tax on crude palm would reduce by 47 percent to US$35, 306, and revenues from refined product would fall by 19 percent to US100.9 million. Total imports of crude palm oil would increase by 4.73 percent to US$451,911 and, processed palm products would increase by 2.97 percent to US$513.4 million.

Scenario 11I

Table 9 Summary result of scenario III

Country	HS Code	Base Year (2013) Export Value (US$ 000)	Percentage change in Export Value (%)	Percentage of Trade Creation in Total Effect (%)	Percentage of Trade Diversion in Total Effect (%)	Total Effect (US$ 000)
Indonesia	151190	323,031.03	-20.63			-66,631.09
Malaysia	151110	430.64	9.53			41.06
Malaysia	151190	170,822.50	56.38	99.35	0.65	96,307.56
Other	151110	0.87	-30.65	30.25	69.75	-0.27
Other	151190	4,955.99				-479.16
Total	151110	431.51	9.45			40.79
Total	151190	498,808.66	5.84			29,135.45

Source: WITS-SMART. Author calculation. (151190 = crude palm oil, 151110 = refined palm oil).

The impact of 100 percent tariff reduction by Turkey on Malaysia's palm oil would bring a significant positive growth of about 10 and 56 percent of crude palm and refined product export revenues for Malaysia. Malaysia would generate a trade creation of 99 percent for crude palm and 30 percent of refined palm products, and a trade diversion of less than one percent of crude palm oil and 70 percent of processed palm oil value at $67.1 million. Indonesia and others would have the highest loss in palm oil product sales to Turkey. Indonesia would lose US$66.7 million follow by Netherland ($292,496) and Singapore ($226,021). The demand for crude palm oil and processed palm oil by Turkey would increase, crude palm oil demand values would increase by about ten percent and refined product by 6 percent. Full liberalisation of trade between Turkey and Malaysia on palm oil and products would make Malaysia dominates both the crude and refined palm oil demand in Turkey. Malaysia would take in a relative trade creation of 30 percent of processed palm products, but would control above 50 percent of the market and the remaining balance for the rest of the world.

Table 10Trade, Welfare and Revenue Effect

Welfare and Revenues Effect of 100 percent reduction in Tariff on Palm Oil and Products			
Product Code	Import Effect (US$ 1000)	Tariff Revenue Loss (US$ 1000)	Consumer Welfare (US$ 1000)
151110	472.31 (9.45%)	0.094 (-99.86%)	3.186
151190	527,944.11 (5.84%)	64942.697 (-47.71%)	5419.347

Source: WITS-SMART. Author calculation

The welfare of Turkish consumers would improve by US$3186 for crude palm oil and US$5.42 million for processes palm products. Government revenues from import tax on crude palm oil and products would fall by 99.9 and 48 percent respectively, this account for US$67, 222 dollars, and US59.2 million loss. The government would be able to generate revenue of $94 from crude palm oil tax and US$64.9 million from refined products. Total imports of crude palm oil would increase by 9.45 percent to US$472,310, and processed palm products would increase by 5.84 percent to US$527.9 million.

VI Conclusion

The primary objective of this paper is to examine the revenue and welfare impacts of Malaysia, Turkey Bilateral Trade Agreement (MTBTA) on the palm oil sector using partial equilibrium model approach. Products as an HS six-digit classification are disaggregated into crude palm oil (151110) and refined palm oil (151190). The purpose of disaggregation is to determine the product that has significant impacts. The SMART model is used to simulate three scenarios and examine trade effects, trade diversion, revenue effects, and welfare impacts.

The simulation result shows that 30 percent tax reduction would bring forward a substantial positive growth in export revenues of 2.9 and 15.5 percent of crude palm and refined palm oil respectively for Malaysia. Malaysia would generate a trade creation of 99 percent for crude palm and 33 percent of refined palm products, and Turkish consumers' welfare would improve by US$2. 05 million. Duty elimination on palm oil from Malaysia would make Malaysia dominates refined palm oil exports to Turkey by controlling more than half of Turkey palm oil market values due to high trade diversion. The welfare of Turkish consumers would improve by US$5.42 million. Export revenues of crude palm oil and processed palm oil from Malaysia would grow by about 10 percent and 56 percent respectively. Indonesia would suffer the highest losses in refined palm oil sales to Turkey followed by Netherland and Singapore. This study throws light on the impacts of the bilateral trade agreement (BTA) on the Malaysian palm oil industry. The reaction of competitors to the profits of BTA might have wrinkled the gains of the previous agreement. Further research needs to explore the active reaction of competitors to BTA.

APPENDIX

Countries are assumed to have fixed world prices under SMART and any changes in the domestic price is as a consequence of the direct effect of tariff changes. Trade creation is calculated in SMART as the immediate increase in imports as a result of import tax reduction.

$$TC_{IJm} = M^1_{IJm} * \pi * \Delta t_{ijm}(1 + \tau_{ijm}) * (1 - n/\beta)$$

TC_{ijm}—Trade creation of commodity i imported from country k into country j

M_{ijm}—Imports of commodity i to country j from exporting country k

Ǿ—Import elasticity of demand in the importing country

t_{ijm}—Tariff

α—Export supply elasticity

Preferential tariff reduction granted by j to country M will induce substitution of imports away from other countries. This is called trade diversion effect i.e the change in Malaysian duty paid prices relative to other prices from the RoW sources after the implementation of the MTBTA. In SMART, the extent of trade diversion depends on the elasticity of substitution and is estimated to:

$$TD_{ijm} = \frac{M^1_{me} * M^1_{row}\left(\left(\frac{1+t_1}{1+t_0}\right) - 1\right) * \Lambda}{M^1_{me} + M^1_{row} + M^1_{row}\left(\left(\frac{1+t_1}{1+t_0}\right) - 1\right) * \Lambda}$$

TD_{ijm}—Trade diversion on commodity i imported from country M into country j

M_{me}—Imports from Malaysia

M_{row}—Imports from the Rest of the world

t_{ijm}—Tariff (t_1 & t_0 refer to post and pre integration tariffs)

δ—Substitution elasticity

The net trade effect (TE) is a summation of total trade creation and trade diversion and represented as:

TE = TC + TD. . . . . (3)

The net revenue effect (RE), which is the total differential of revenue with respect to import price and volume of imports after the tariff change, is:

$$\frac{\Delta R_{ijm}}{R_{ijm}} = \frac{\Delta t_{ijm}}{1 + t_{ijm}} * \emptyset \left(\frac{1 + \alpha}{\alpha - \emptyset}\right) \ldots\ldots\ldots (4)$$

R_{ijm}— Revenue effect of tariff change, Ø—Import elasticity of demand in the importing country , t_{ijm}— Tariff,

α—Export supply elasticity.

The welfare effect is defined as the summation of consumers and producers' surplus. The net welfare effect in the importing country is represented in (equation 5)

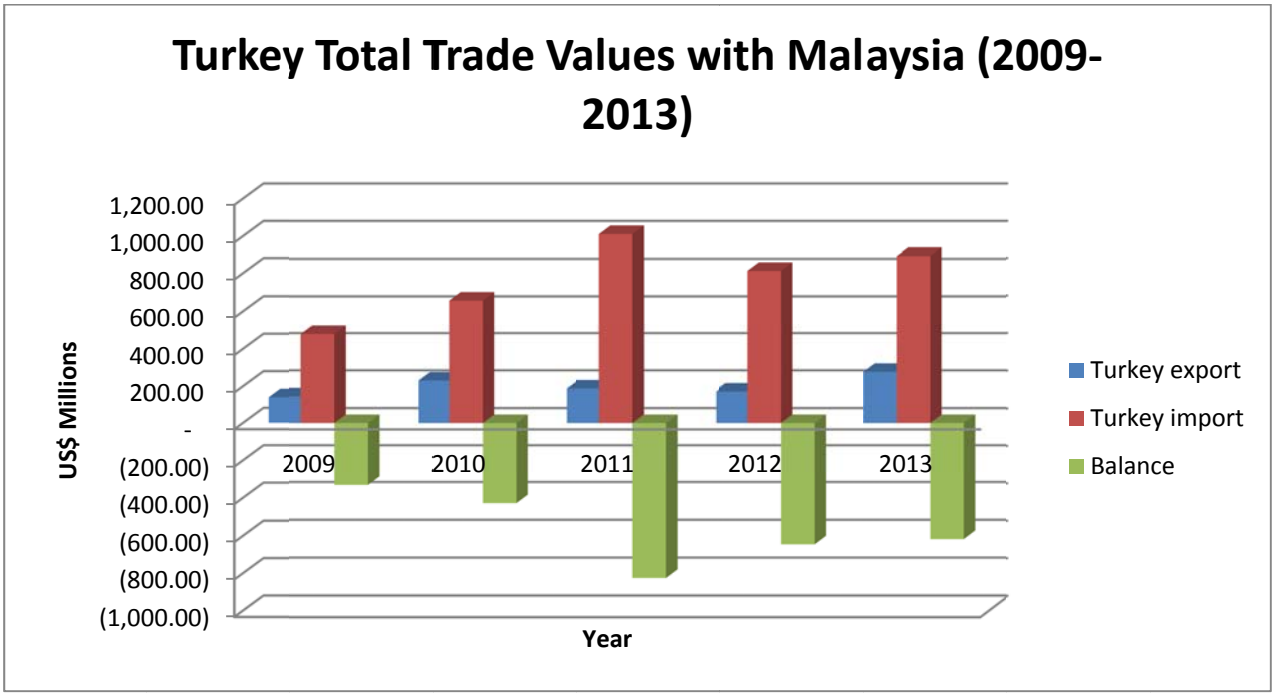
$$W_{ijm} = 0.5(\Delta t_{IJM} * \Delta M_{ijm}) \ldots\ldots\ldots (5)$$

M_{ijm}— Imports of commodity i to country j from exporting country m, t_{ijm}— Tariff.

Adopted from Sangeeta et al., (2009).

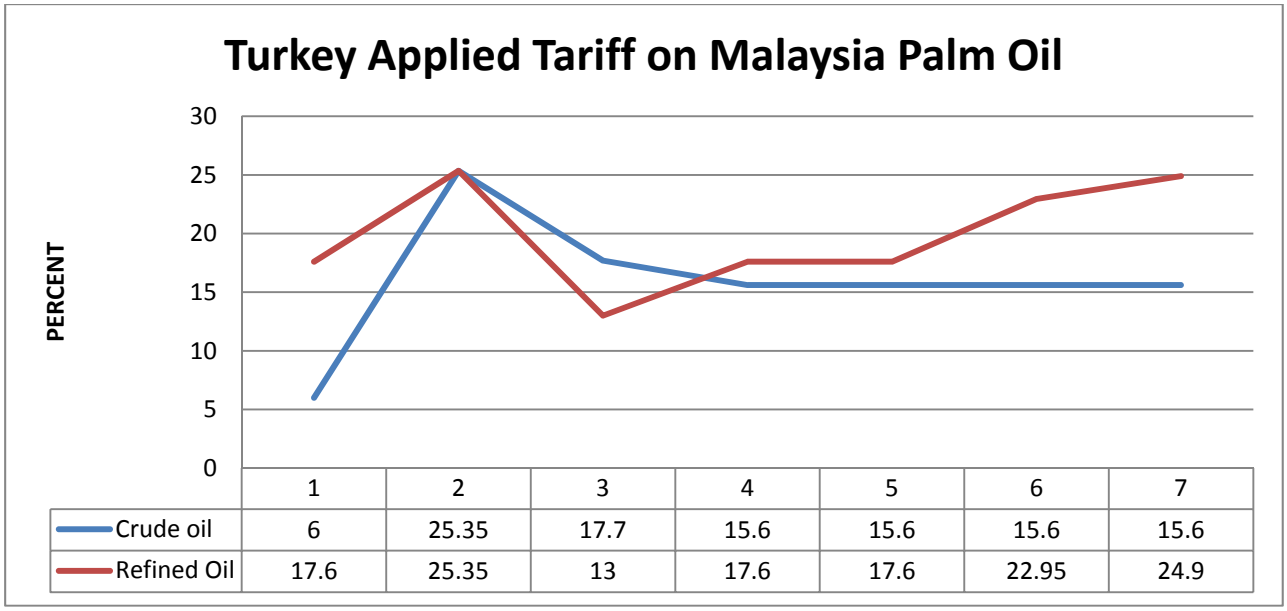
FIGURE

Figure (I)



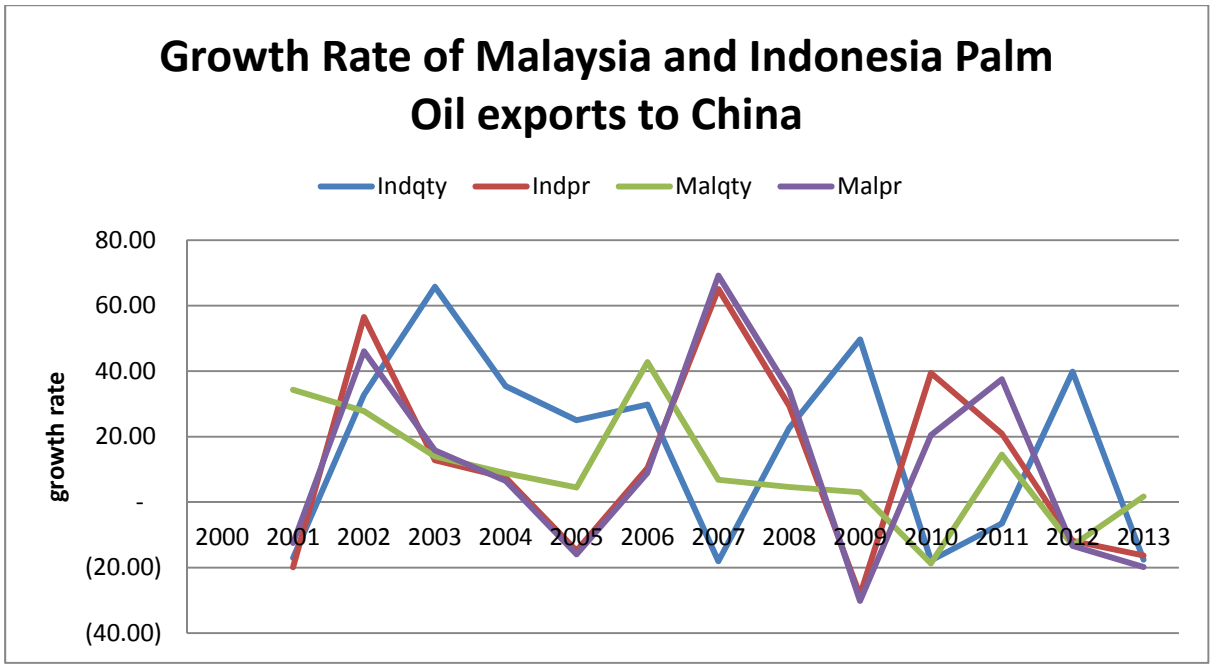
Source: Author calculated from UNComtrade.

Figure (II)



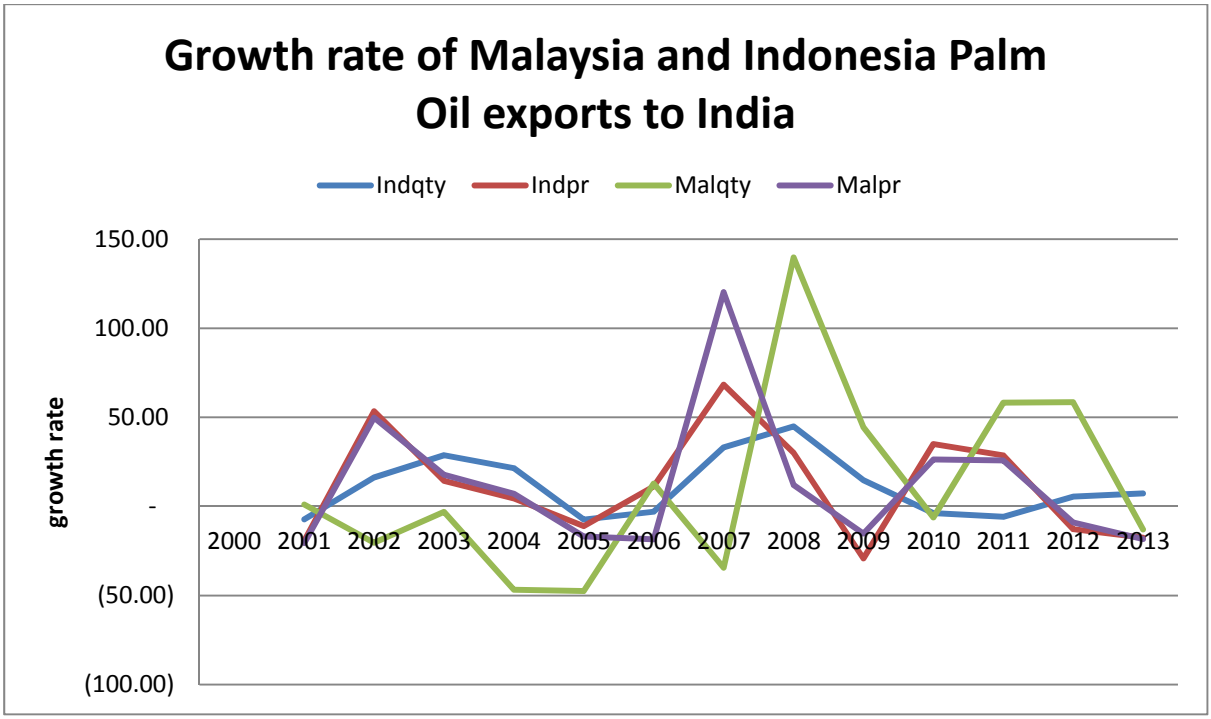
Source: Author calculated from TRAINS and WTO database.

Figure (iii)



Note Indgty- Indonesia quantity, Indpr—Indonesia price, Malqty—Malaysia quantity, Malpr—Malaysia price

Source: Self computed from Comtrade database



Note Indgty- Indonesia quantity, Indpr—Indonesia price, Malqty—Malaysia quantity, Malpr—Malaysia price

Source: Self computed from Comtrade database

TABLE 1 Malaysia Bilateral and Regional Trade Agreement (2005–2014)

	Commerce	Concluded	Implemented
Malaysia—Australia	April 2005	March 2012	1st January, 2013
Malaysia—Japan	13th December, 2005	13th July, 2006	13th July, 2006
Malaysia—Pakistan	8th Nov. 2007	1st January, 2008	1st January, 2008
Malaysia—India	24th September, 2010	18th Feb. 2011	1st July, 2011
Malaysia—New Zealand	May, 2005	30th May, 2009	1st August, 2010
Malaysia—Chile		13th May, 2010	25th Feb, 2010
Malaysia—EU	6th Dec. 2010	Negotiation @ 7th round	Anticipating
Malaysia—Turkey	June 2010	April, 2014	Anticipating
ASEAN—China	4th Nov. 2002	Nov. 2004	1st July, 2005
ASEAN—Korea	8th Oct. 2003	13th Dec. 2005	1st July, 2006

Source: MITI

TABLE 2 Palm Oil Imports, Pre and Post Bilateral Trade Agreement (2005—2013) Thousand Tonnes

Country	China	Growth rate %	Japan	Growth rate %	India	Growth rate %	Pakistan	Growth rate %	New Zealand	Growth rate %
2000	908.90		359.62		1545.67		1087		14.52	
2001	1148.71	26.38	380.35	5.76	1575.14	1.91	1251	15.09	15.48	6.61
2002	1697.65	47.79	410.13	7.83	1387.95	-11.88	1040	-16.87	21.18	36.82
2003	2432.27	43.27	424.15	3.42	1334.99	-3.82	1154	10.96	18.79	-11.28
2004	2692.59	10.70	462.23	8.98	808.92	-39.41	930	-19.41	21	11.76
Growth rate	24.25		5.14		-12.15		-3,07		7.66	
2005	2,960.50		472.5		619.63		957		20.92	
2006	3,577.80	20.85	517.1	9.44	m		968.4	1.19		
2007	3,840.40	7.34	527.3	1.97	511.17		1,070.00	10.49	21.783	

2008	3,794.50	-1.20	547.5	3.83	970.73	89.90	1,257.40	17.51	22.293	2.34
2009	4,027.23	6.13	538.88	-1.57	1,354.43	39.53	1,769.32	40.71	22.36	0.30
Growth rate	6.35		2.66		16.93		13.08		1.34	
2010	3,483.78	-13.49	551.61	2.36	1,170.00	-13.62	2,134.60	20.65	20.58	-7.96
2011	3,982.13	14.30	541.44	-1.84	1,667.91	42.56	1,821.01	-14.69	25.49	23.86
2012	3,502.06	-12.06	559.45	3.33	2,639.93	58.28	1,343.25	-26.24	22.75	-10.75
2013	3,699.64	5.64	501.45	-10.37	2,325.39	-11.91	1,435.22	6.85	22.44	-1.36
2014	2,839.28	-23.26	513.48	2.40	3,229.97	38.90	812.19	-43.41	21.71	-3.25
Growth rate	-4.01		-1.42		22.52		-17.57		1.07	

Source: Author calculated from various source MPOB (2005–2014), COMTRADE (2000–2004), Oil World (Pakistan, 2000–2004). Note Growth rate calculated at compound rate.

TABLE 3 Bilateral Trade between Malaysia and Turkey (2009 -2013)

Turkey Trade to Malaysia								
Year	Export US$ Billion	% of Total Export	Import US$ Billion	% of Total Import	Total Trade US$ Billion	Balance Of Trade US$ Billion	Trade Intensity Index	Trade Complimentarity Index
2009	0.14	0.1	0.96	0.7	1.1	-0.82	13.31	49.64
2010	0.23	0.2	1.12	0.6	1.35	-0.9	16.91	51.34
2011	0.18	0.1	1.57	0.7	1.75	-1.38	12.15	54.21
2012	0.17	0.1	1.28	0.5	1.44	-1.11	9.09	52.17
2013	0.27	0.2	1.23	0.5	1.5	-0.96	14.66	52.59
Growth Rate (2009–2013)	14.04	14.86	5.08	-6.5	6.4	-3.2	1.95	1.16
Malaysia Trade to Turkey								
Year	Export US$ Billion	% of Total Export	Import US$ Billion	% of Total Import	Total Trade US$ Billion	Balance Of Trade US$ Billion	Trade Intensity Index	Trade Complimentarity Index
2009	0.48	0.3	0.11	0.09	0.59	0.36	30.52	60.14
2010	0.66	0.3	0.14	0.1	0.8	0.52	31.61	59.1
2011	1.01	0.4	0.18	0.1	1.19	0.83	39.4	60.41
2012	0.82	0.4	0.2	0.1	1.02	0.61	33.28	51.32
2013	0.89	0.4	0.2	0.1	1.09	0.69	35.1	50.97
Growth Rate (2009–2013)	13.14	5.92	12.7	2.13	13.06	13.89	2.83	-3.25

Source: Author calculated from UNComtrade.

TABLE 4 Turkey Imports of Malaysia Products (2013)

Product Code	Trade Value in US$1000—End Year	% of Total—End Year	Compound Annual Growth Rate	Rank
01–05_Animal	112.21	0.01	-82.39	
06–15_Vegetable	241,181.66	19.6	-19.36	2
16–24_FoodProd	40,303.39	3.27	100.04	7
25–26_Minerals	51.08	0	43.83	15
27–27_Fuels	1,770.64	0.14	-59.32	13
28–38_Chemicals	77,035.37	6.26	-3.96	6
39–40_PlastiRub	184,124.45	14.96	-12.23	4
41–43_HidesSkin	1,778.23	0.14	60.23	12
44–49_Wood	16,471.35	1.34	23.65	9
50–63_TextCloth	197,240.48	16.03	6.49	3
64–67_Footwear	532.87	0.04	-44.14	14
68–71_StoneGlas	12,367.72	1	-10.67	10
72–83_Metals	115,181.37	9.36	66.3	5
84–85_MachElec	302,149.43	24.55	-13.27	1
86–89_Transport	5,413.96	0.44	-20.25	11
90–99_Miscellan	35,068.41	2.85	39.59	8
Total	1,230,782.62	100	74.54	15

Source: Author Ranking from UNComtrade.

TABLE 11 Malaysia Export Earning of Palm Oil and Products (RM Million)

Year	Palm oil	Palm kernel	OLEOCHEMICALS	Other	Total	% GDP
2008	47,925.95	4,159.84	8,706.41	4,422.99	65,215.19	8.47
2009	36,947.58	3,021.22	6,582.91	3,107.26	49,658.97	6.97
2010	44,859.88	4,341.70	7,973.69	2,555.37	59,730.64	7.49
2011	60,471.92	6,097.36	10,846.90	2,995.25	80,411.43	9.08
2012	52,994.56	4,097.34	11,458.38	2,897.88	71,448.16	7.58
2013	45,269.23	3,406.38	9,297.66	3,390.08	61,363.35	6.22
2014	44,434.06	4,172.07	11,286.69	3,567.62	63,460.44	

Source: MPOB, 2015. Worldbank database

TABLE 13 Growth rate of Malaysia and Indonesia Palm Oil Prices and Quantity Exports

Year	Indonesia Export Quantity	Indonesia Export Price	Malaysia Export Quantity	Malaysia Export Price	Indonesia Export Quantity	Indonesia Export Price	Malaysia Export Quantity	Malaysia Export Price
	Japan	Japan	Japan	Japan	Pakistan	Pakistan	Pakistan	Pakistan
2000								
2001	-7.30	-20.84	6.45	-15.89	537.69	-0.10	4.34	-13.32
2002	-52.91	42.15	15.96	30.57	179.38	23.85	-7.00	48.93
2003	-69.15	77.71	-2.86	16.84	6.60	23.10	3.10	16.68
2004	1,039.86	-8.42	8.69	11.61	87.11	-4.55	-21.06	8.41
2005	-82.09	55.07	-3.55	-14.49	58.24	-2.84	8.37	-15.96
2006	358.71	-32.52	13.97	7.06	-1.79	7.28	53.36	-29.02
2007	-68.36	112.87	6.11	58.97	-5.62	70.93	-24.05	152.95
2008	-81.65	27.94	0.33	45.70	-48.00	37.15	22.58	29.93
2009	4,013.59	-41.51	-0.48	-33.84	-47.64	-31.07	46.69	-32.57

2010	18.56	17.05	3.23	23.03	-57.90	37.78	17.04	35.70
2011	0.15	26.09	1.06	38.59	209.17	18.30	-15.23	29.69
2012	24.99	-7.25	0.45	-11.15	168.28	-10.31	-27.16	-10.35
2013	91.00	-23.37	-8.59	-19.64	44.21	-20.93	3.77	-20.31

Source: Self computed from Comtrade database

TABLE 12 Major Importers of Malaysia Palm Oil (Tonnes)

Country	2009	2010	2011	2012	2013	2014
BANGLADESH	109,771 (0.7%)	168,117 (1.0%)	150,095(0.8%)	273,535(1.6%)	442,053(2.4%)	321,705(1.9%)
BENIN	353,275(2.2%)	376,742(2.3%)	270,672(1.5%)	280,434(1.6%)	473,145(2.6%)	456,254(2.6%)
CHINA P.R	4,027,229(25.4%)	3,483,779(20.9%)	3,982,128(22.1%)	3,502,057(20%)	3,699,638(20.4%)	2,839,283(16.4%)
EGYPT	609,210(3.8%)	938,722(5.6%)	710,421(4%)	431,323(2.5%)	450,634(2.5%)	349,172(2.0%)
INDIA	1,354,429(8.5%)	1,169,998(7%)	1,667,908(9.3%)	2,639,930(15%)	2,325,386(13%)	3,229,965(19%)
IRAN	342,273 (2.2%)	272,967 (1.6%)	342,423 (1.9%)	548,603(3.1%)	635,258(3.5%)	447,058(2.6%)
JAPAN	538,878(3.4%)	551,614(3.3%)	541,439(3.0%)	559,449(3.2%)	501,452(2.8%)	513,483(3%)
NETHERLANDS	989,834(6.2%)	1,099,068(6.6%)	1,144,090(6.4%)	1,374,288(7.8%)	1,539,096(8.5%)	1,598,221(9.3%)
PAKISTAN	1,769,321(11.1%)	2,134,604(12.8%)	1,821,009(10.1%)	1,343,254(7.6%)	1,435,217(7.9%)	812,191(4.7%)
PHILIPPINES	119,255(0.8%)	204,731(1.2%)	512,218(2.9%)	285,155(1.6%)	206,871(1.1%)	493,742(2.9%)
RUSSIA	210,603(1.3%)	163,154(0.9%)	107,196(0.6%)	59,494(0.3%)	54,498(0.3%)	18,579(0.1%)
SINGAPORE	353,477(2.2%)	401,340(2.4%)	477,264(2.7%)	563,124(3.2%)	492,138(2.7%)	481,455(2.8%)
TURKEY	19,589(0.1%)	17,604(0.1%)	106,574(0.6%)	35,572(0.2%)	83,589(0.5%)	77,564(0.5%)
U.S.A	859,401(5.4%)	1,028,048(6.2%)	1,054,997(5.7%)	1,029,427(5.9%)	1,026,989(5.7%)	783,105(4.5%)

Source: MPOB, 2015. Market share in parenthesis

REFERENCE

Ahmed, S., 2010. *India-ASEAN Free Trade Agreement: A sectoral analysis.* SSRN Working paper, 1698849 Accessed February, 2015 http://papers.ssrn.com/s013/papers.cfm?abstract_id=1698849

ASEAN. Association of South East Asian Nations

Balu. N. and N. Ismail, 2011. Free Trade Agreement: The way forward for the Malaysian Palm Oil Industry. Oil Palm Industry Economic Journal, Vol. 11 (2), MPOB.

Choo, M., 2012. Malaysia Palm Oil Industry: Enhancing Competitiveness in meeting challenges. Paper presented at Malaysia-Romania Palm Oil Trade Fair and Seminar (POTS) Bucharest, Romania.12 September, 2012.

Choudhry. S. Kallummal. M. and P. Varma, 2013. Trade Creation and Trade Diversion in India-Sri Lanka Free Trade Agreement. Working paper January 2013, A Sector Specific Analysis.Centre for WTO Studies, India Institute of Foreign Trade.

Joao, P., 2009. Economic Integration, International Trade and the Role of Foreign Direct Investment and International trade Theory. Deutsche National Bibliothek, http://dnb.d-nb.de ISBN 978–3–643–10084–9.

Lang, R., 2006. A Partial Equilibrium Analysis of the Impact of the ECOWAS-EU Economic Partnership Agreement. paper presented on *Multilateralism, Bilateralism, and Development,* 9th GTAP Annual Conference on Global Economic Analysis, 14–18 June 2006, Addis Ababa.

MPOB. Malaysia Palm Oil Board. available at http://www.mpob.gov.my/ms.

MITI., 2015. Malaysia Ministry of Trade and Investment. http://www.miti.gov.my/cms/index.jsp.

Nekhay. O. Fellman. T. and S. Gay, 2012. A Free Trade Agreement between Ukraine and the European Union: Potential effects on agricultural market and farmers revenues.
https://ideas.repec.org/a/taf/pocoec/v24y2012i3p351–363.html#cites

Rahman. K., Molla. R. and Md. Murray, 2008. Japan—Malaysia Free Trade Agreement: Expectations and Archievements. Journal of Comparative Management, V01.11, Number 1.

Rashmi, B., 2015. Trans Pacific Partnership Agreement (TPPA): Implications for Malaysia's Domestic Value-Added Trade Working paper January 2015, Center for WTO Studies (CWS), New Delhi. . CWS/WP/200/ 18.

Sangeeta. K, Kato. K. and P. Nicholas, 2009. Assessing the Welfare Effects of the East Africa Community Customs Union's Transition Arrangements on Uganda. Journal of Economic Integration 24(4), Dec.2009.pp.685–708.

Sen. R. Srivastava. S. and G. Pacheco, 2013. The Effects of Preferential Trade Agreements (PTAS) on Intral- Regional Trade within ASEAN + 6 members. Journal of Southeast Asia Economiess (JSEAE), V01.30, N0.3, Dec.pp.237–249.

Veeramani. C. and K. Gordhan, 2010. Impact of ASEAN-India FTA on India's Plantation Commodities:
A Simulation Analysis. Indira Gandhi Institute of Development Research, Mumbai April 2010 http://www.igidr.ac.in/pdf/publication/WP-2010–004.pdf.

Villa. C. Abella. D. and L. Herrera, 2012. The Colombia-Canada Free Trade Area: A partial equilibrium simulation. Semestre económico, volumen 15, no. 31, pp. 15–42 • ISSN 0120–6346, enero-junio de 2012, medellín, Colombia.

Viner, J., 1950. The Customs Union Issue. New York: Carnegie Endowment for International Peace.

Wadim, S., 2013. Advanced Economics of European Integration: Microeconomic Aspects. lecture note on economics of Customs Union Viner's model of Customs Union. Ies Fsv Cuni October 7, 2013.

WITS., World Integrated Trade Solution. Software developed by World Bank and United Nations Conference on Trade and Development (UNCTAD).

WTO., World Trade Organisation" http://tariffdata.wto.org/default.aspx

Yarbrough. B. and R. Yarbrough, 2006. The World Economy, Trade and Finance." Second Edition, pp. 259–261.

USDA., United States Department of Agriculture. http://www.ers.usda.gov/data-products.aspx